

REMARKS

I. STATUS OF THE CLAIMS

Claim 37 is allowed.

New claim 59 is added, and is similar to claim 37. Therefore, it is respectfully submitted that claim 59 should be allowable.

In view of the above, it is respectfully submitted that claims 31-59 are currently pending.

II. OBJECTION TO CLAIMS 39-41 AND 43

The claims are amended as suggested by the Examiner, to thereby overcome the objection.

III. PRIOR ART REJECTIONS

Claim 38 is amended to recite that at least one layer successively arranged from an outermost surface of the multilayer film has a predetermined portion in which material of the respective layer does not exist so that the respective layer is thereby non-uniform across the multilayer film.

Regarding Yamamoto, in Fig. 1 of Yamamoto, the j -th layer is assumed to be a homogeneous, isotropic, plane-parallel film of thickness d_j (see page 1623, col. 1, second paragraph, of Yamamoto). The j -th layer is built over entire region of the $(j-1)$ -th layer, and the j -th layer has a flat thickness d_j (fig. 1). In Fig. 2 of Yamamoto, Yamamoto let $d_j \rightarrow 0$, and the j -layer system becomes the $(j-1)$ -layer system (see Fig. 2(b) of Yamamoto). More specifically, the entire j -th layer is removed.

Therefore, in Yamamoto, each layer is uniform across the structure, and is either provided on the multilayer structure or is entirely removed.

Yamamoto does not disclose or suggest that at least one layer successively arranged from an outermost surface of the multilayer film has a predetermined portion in which material of the respective layer does not exist so that the respective layer is thereby non-uniform across the multilayer film.

Moreover, claim 38 is also amended to recite that more than one pairs of layers among the plurality of repeated pairs of layers adjusts a wavefront phase of a light reflected by the multilayer film.

Sweeney discloses a mask comprising one layer (an absorber layer 130). The absorber layer of Sweeney does not include a plurality of pairs of repeating layers. Accordingly, Sweeney does not disclose or suggest that more than one pairs of layers among a plurality of repeated pairs of layers adjusts a wavefront phase of a light reflected by the multilayer film as recited, for example, in claim 38.

Voorma discloses a process of ion bombardment for smoothening each of Si layers of a multilayer mirror. Voorma is not directed to a plurality of repeating pairs of layers as recited, for example, in the amended claim 38.

The above comments are directed to claim 38. However, it is respectfully submitted that the comments would be helpful in understanding various differences of other claims over the cited references.

IV. CONCLUSION

In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If there are any additional fees associated with filing of this Amendment, please charge the fees to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By:

Paul I. Kravetz
Paul I. Kravetz
Registration No. 35,230

1201 New York Avenue, NW, 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501